

MAGNETIC POLE FABRICATION PROCESS AND DEVICE

ABSTRACT OF THE DISCLOSURE

A method and apparatus for fabricating an electroplating mask for the formation of a miniature magnetic pole tip structure. The method incorporates a silylation process to silylate photoresist after creating a photoresist cavity or trench in the electroplating mask. The silylation process is performed after a dry etch of the photoresist. Alternatively, silylation is performed after a lithographic patterning of the trench. As a result of chemical biasing, the vertical side walls of the photoresist layer shift inward creating a narrower trench. The resulting structure formed after electroplating has a width of less than 0.3 micrometers. This structure can be used as a magnetic pole of a thin film head ("TFH") for a data storage device.

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